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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,895	04/12/2001	Hijin Sato	206006US-2	1666

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
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ALEXANDRIA, VA 22314

EXAMINER

DEAN, RAYMOND S

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/832,895

Applicant(s)

SATO ET AL.

Examiner

Raymond S. Dean

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-13 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 12, and 16 have been considered but are moot in view of the new ground(s) of rejection.

Kumar further teaches changing another of the radio terminals within the service area to a retransmission-permitted terminal based on a status of retransmission requests received from the terminals (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, another one of the terminals is selected to be the active receiver which can request retransmission) such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed retransmission-permitted terminal is reduced by said changing of said one of the originally designated terminals to the retransmission-inhibited terminal and said changing of said another of the terminals to the retransmission-permitted terminal (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, selecting different terminals as the active receivers enables an efficient use of resources thus eliminating acknowledgement implosion which leads to a reduction in the correlation between reception errors occurring at an original active receiver and reception errors occurring at a newly selected active receiver).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 9, 11 – 13, and 15 – 19 are rejected under 35 U.S.C. 102(b) as being unpatentable over Marturano et al. (5,636,230) in view of Kumar (US 6,269,080).

Regarding Claim 1, Marturano teaches a retransmission control method in a multicast service providing system in which an information delivery apparatus transmits multicast information to radio terminals within a service area of the information delivery apparatus via a radio section (Figure 1, Column 2 lines 43 – 52), some of the radio terminals being configured to send a request for retransmission of the multicast information in case of an error and others of the radio terminals being configured to not send the request for retransmission (Column 3 lines 20 – 38); said method comprising: determining whether respective of the radio terminals within the service area is designated as a retransmission-permitted terminal permitted for retransmission of the multicast information (Column 4 lines 16 – 62), and determining by the information delivery apparatus that at least one of the radio terminals receiving the multicast information is predetermined as being the retransmission-permitted terminal permitted for retransmission of the multicast information (Column 3 lines 20 – 26, the transmitting data unit, which is the information delivery apparatus, receives NACKs from the

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receiving data units, the said NACKs are transmitted by those receiving data units that are permitted to receive retransmissions thus said NACKs will be an indication to said transmitting data unit that at least one of said receiving data units is predetermined as being a retransmission permitted data unit thus further enabling said transmitting data unit to determine said retransmission permission); notifying a retransmission designation status to the retransmission-permitted terminal, and delivering, when a request for retransmission of the multicast information sent by one of the radio terminals is received, the multicast information to said one of the radio terminals (Column 4 lines 16 – 49, the counter limit sent during the preamble is the notification); and changing one of the radio terminals designated as being the retransmission-permitted terminal, to a retransmission-inhibited terminal which is not permitted for retransmission of the multicast information, based on a status of retransmission requests received from the radio terminals (Column 3 lines 20 – 38).

Maturano does not teach determining by the information delivery apparatus, in accordance with a given standard without receiving a message or a request for retransmission from the radio terminals by the information delivery apparatus that at least one of the radio terminals is predetermined as being the retransmission-permitted terminal permitted for retransmission of the multicast information and changing another of the radio terminals within the service area to a retransmission-permitted terminal based on a status of retransmission requests received from the radio terminals such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed

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retransmission-permitted terminal is reduced by said changing of said one of the originally designated radio terminals to the retransmission-inhibited terminal and said changing of said another of the radio terminals to the retransmission-permitted terminal.

Kumar teaches determining by the information delivery apparatus, in accordance with a given standard without receiving a request for retransmission from the terminals by the information delivery apparatus that at least one of the terminals is predetermined as being the retransmission-permitted terminal permitted for retransmission of the multicast information (Column 6 lines 52 – 67, Column 7 lines 1 – 10, the standard is the receiver selection process) and changing another of the terminals within the service area to a retransmission-permitted terminal based on a status of retransmission requests received from the terminals (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, another one of the terminals is selected to be the active receiver which can request retransmission) such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed retransmission-permitted terminal is reduced by said changing of said one of the originally designated terminals to the retransmission-inhibited terminal and said changing of said another of the terminals to the retransmission-permitted terminal (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, selecting different terminals as the active receivers enables an efficient use of resources thus eliminating acknowledgement implosion which leads to a reduction in the correlation between reception errors occurring at an original active receiver and reception errors occurring at a newly selected active receiver).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the active receiver selection method taught in Kumar in the multicast system taught in Marturano as an alternative means for eliminating the acknowledgement implosion problem associated with multicast transport protocols by making only one receiver responsible for generating acknowledgements and also requesting retransmissions as taught by Kumar.

Regarding Claim 2, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches the step comprising a step of determining, at the information delivery apparatus, said at least one radio terminal (Column 4 lines 16 – 62); and the retransmission control method further comprises a step of notifying said at least one radio terminal that a request for retransmission is permitted (Column 4 lines 16 – 49, the notification is the counter limit that is sent during the preamble).

Regarding Claim 3, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches a step that comprises a step of determining, at each radio terminal, whether its own terminal is placed in retransmission control (Column 4 lines 16 – 49, since the receiving data units receive the counter limit during the preamble said receiving data units know if they will be placed in retransmission control).

Regarding Claim 4, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches the step of determining a

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plurality of radio terminals to be placed in retransmission control (Column 4 lines 16 – 62).

Regarding Claim 5, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches radio terminals in a service area (Figure 1, Column 2 lines 43 – 52). Kumar further teaches a step of grouping terminals on the basis of unique information assigned to the terminals; and the step determines at least one terminal on the basis of grouping terminals (Figure 4, Figure 5, Figure 9, Figure 10, Column 6 lines 52 – 67, Column 7 lines 1 – 17, Column 7 lines 44 – 67, Column 8 lines 1 – 16, Column 10 lines 27 – 67, Column 11 lines 1 – 15).

Regarding Claim 6, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches a step that determines at least one radio terminal on the basis of a quality of communications between the information delivery apparatus and each of the radio terminals (Column 4 lines 63 – 67, Column 5 lines 1 – 12).

Regarding Claim 7, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches a step that determines at least one radio terminal on the basis of distances between the information delivery apparatus and the radio terminals (Column 4 lines 63 – 67, Column 5 lines 1 – 12, the RSSI and the SNR can improve or degrade as the distance changes thus this is an inherent characteristic).

Regarding Claim 8, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches a step that determines at least

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one radio terminal on the basis of directions of the radio terminals from the information delivery apparatus (Column 4 lines 50 – 62).

Regarding Claim 9, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches a step that determines at least one radio terminal on the basis of moving speeds of the radio terminals (Column 4 lines 50 – 62).

Regarding Claim 11, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 1. Marturano further teaches a step of changing said at least one radio terminal to another radio terminal when said at least one radio terminal terminates reception of the multicast information (Figure 1, Column 2 lines 43 – 52, Column 3 lines 20 – 38, there will be a plurality of receiving data units that have NACK capability thus when one receiving data unit terminates reception there will be other receiving data units with NACK capability that will still be receiving data).

Regarding Claim 12, Marturano teaches an information delivery apparatus for use in a multicast service providing system in which the information delivery apparatus transmits multicast information to radio terminals within a service area of the information delivery apparatus via a radio section (Figure 1, Column 2 lines 43 – 52, the transmitting data unit is the information delivery apparatus), some of the radio terminals being configured to send a request for retransmission of the multicast information in case of an error and others of the radio terminals being configured to not send the request for retransmission (Column 3 lines 20 – 38), said information delivery apparatus comprising: a first unit configured to determine whether respective of the radio terminals

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within the service area is designated as a retransmission-permitted terminal permitted for retransmission of the multicast information (Column 4 lines 16 – 62, since the transmitting data unit conducts this function said transmitting data unit comprises an inherent first unit), at least one of the radio terminals receiving the multicast information is configured to be the retransmission-permitted terminal permitted for retransmission of the multicast information (Column 3 lines 20 – 26); a second unit configured to notify a retransmission designation status to the retransmission-permitted terminal, and delivering, when a request for retransmission of the multicast information sent by one of the radio terminals is received, the multicast information to said one of the radio terminals (Column 4 lines 16 – 49, the counter limit sent during the preamble is the notification, since the transmitting data unit conducts this function said transmitting data unit comprises an inherent second unit); and a third unit configured to change one of the radio terminals designated as being the retransmission-permitted terminal, to a retransmission-inhibited terminal which is not permitted for retransmission of the multicast information, based on a status of retransmission requests received from the radio terminals (Column 3 lines 20 – 38, since the transmitting data unit conducts this function said transmitting data unit comprises an inherent third unit).

Maturano does not teach said first unit also being configured to determine in accordance with a given standard without receiving a message or a request for retransmission from the radio terminals by the information delivery apparatus that at least one of the radio terminals is predetermined to be the retransmission-permitted terminal permitted for retransmission of the multicast information and changing another

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of the radio terminals within the service area to a retransmission-permitted terminal based on a status of retransmission requests received from the radio terminals such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed retransmission-permitted terminal is reduced by said changing of said one of the originally designated radio terminals to the retransmission-inhibited terminal and said changing of said another of the radio terminals to the retransmission-permitted terminal.

Kumar teaches a unit being configured to determine in accordance with a given standard without receiving a request for retransmission from the terminals by the information delivery apparatus that at least one of the terminals is predetermined to be the retransmission-permitted terminal permitted for retransmission of the multicast information (Column 6 lines 52 – 67, Column 7 lines 1 – 10, the standard is the receiver selection process) and changing another of the terminals within the service area to a retransmission-permitted terminal based on a status of retransmission requests received from the terminals (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, another one of the terminals is selected to be the active receiver which can request retransmission) such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed retransmission-permitted terminal is reduced by said changing of said one of the originally designated terminals to the retransmission-inhibited terminal and said changing of said another of the terminals to the retransmission-permitted terminal (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, selecting different terminals as the active

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receivers enables an efficient use of resources thus eliminating acknowledgement implosion which leads to a reduction in the correlation between reception errors occurring at an original active receiver and reception errors occurring at a newly selected active receiver).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the active receiver selection method taught in Kumar in the multicast system taught in Marturano as an alternative means for eliminating the acknowledgement implosion problem associated with multicast transport protocols by making only one receiver responsible for generating acknowledgements and also requesting retransmissions as taught by Kumar.

Regarding Claim 13, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 12. Marturano further teaches wherein the first unit determines a plurality of radio terminals to be placed in retransmission control (Column 4 lines 16 – 62).

Regarding Claim 15, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 13. Marturano further teaches a fourth unit managing status of retransmission requests sent by radio terminals placed in the retransmission control, the third unit changing said at least one radio terminal on the basis of the status of retransmission requests managed by the fourth unit (Column 3 lines 20 – 38, the repeated NACKs are a status of the retransmission requests thus there is an inherent fourth unit that manages said NACKs).

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Regarding Claim 16, Marturano teaches a radio terminal configured to receive multicast information transmitted from an information delivery apparatus via a radio section (Figure 1, Column 2 lines 43 – 52), said radio terminal comprising: a first unit configured to determine whether the radio terminal is notified from the information delivery apparatus as being a retransmission-permitted terminal which is permitted for retransmission of the multicast information (Column 4 lines 16 – 40, the count limit sent during the preamble to the receiving data unit is the notification thus there is an inherent first unit), and at least one of the radio terminals receiving the multicast information is identified by the information delivery apparatus as being the retransmission-permitted terminal permitted for retransmission of the multicast information (Column 3 lines 20 – 26, the transmitting data unit, which is the information delivery apparatus, receives NACKs from the receiving data units, the said NACKs are transmitted by those receiving data units that are permitted to receive retransmissions thus said NACKs will be an indication to said transmitting data unit that at least one of said receiving data units is predetermined as being a retransmission permitted data unit thus further enabling said transmitting data unit to determine said retransmission permission); and a second unit configured to send a request for retransmission of the multicast information to the information delivery apparatus in case of an error when it is determined that the radio terminal is notified as being the retransmission-permitted terminal (Column 4 lines 16 – 49, since the receiving data unit conducts this function said receiving data unit comprises an inherent second unit).

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Marturano does not teach said first unit also being configured to determine in accordance with a given standard without receiving a message or a request for retransmission from the radio terminals by the information delivery apparatus that at least one of the radio terminals is identified by the information delivery apparatus as being the retransmission-permitted terminal permitted for retransmission of the multicast information and changing another of the radio terminals within the service area to a retransmission-permitted terminal and a second unit configured to send a request for retransmission of the multicast information to the information delivery apparatus in case of an error when it is determined that the radio terminal is notified as being the retransmission-permitted terminal such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed retransmission-permitted terminal is reduced by said changing of said one of the originally designated radio terminals to the retransmission-inhibited terminal and said changing of said another of the radio terminals to the retransmission-permitted terminal.

Kumar teaches a unit also being configured to determine in accordance with a given standard without receiving a request for retransmission from the terminals by the information delivery apparatus that at least one of the terminals is identified by the information delivery apparatus as being the retransmission-permitted terminal permitted for retransmission of the multicast information (Column 6 lines 52 – 67, Column 7 lines 1 – 10, the standard is the receiver selection process); changing another of the terminals within the service area to a retransmission-permitted terminal (See Columns:

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6 lines 52 – 67, 7 lines 1 – 24, another one of the terminals is selected to be the active receiver which can request retransmission) and a second unit configured to send a request for retransmission of the multicast information to the information delivery apparatus in case of an error when it is determined that the terminal is notified as being the retransmission-permitted terminal such that correlation between reception errors occurring at the originally designated retransmission-permitted terminal and reception errors occurring at the newly changed retransmission-permitted terminal is reduced by said changing of said one of the originally designated terminals to the retransmission-inhibited terminal and said changing of said another of the terminals to the retransmission-permitted terminal (See Columns: 6 lines 52 – 67, 7 lines 1 – 24, selecting different terminals as the active receivers enables an efficient use of resources thus eliminating acknowledgement implosion which leads to a reduction in the correlation between reception errors occurring at an original active receiver and reception errors occurring at a newly selected active receiver).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the active receiver selection method taught in Kumar in the multicast system taught in Marturano as an alternative means for eliminating the acknowledgement implosion problem associated with multicast transport protocols by making only one receiver responsible for generating acknowledgements and also requesting retransmissions as taught by Kumar.

Regarding Claim 17, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 16. Marturano further teaches wherein the first unit

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determines whether its own terminal is placed in retransmission control on the basis of given information sent by the information delivery apparatus (Column 4 lines 16 – 40, the count limit sent during the preamble lets the receiving data unit know whether it will be placed in retransmission control).

Regarding Claim 18, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 16. Marturano further teaches wherein the first unit determines whether its own terminal is placed in retransmission control on the basis of a quality of communications with the information delivery apparatus (Column 4 lines 63 – 67, Column 5 lines 1 – 12).

Regarding Claim 19, Marturano in view of Kumar teaches all of the claimed limitations recited in Claim 16. Marturano further teaches a third unit, which corrects the multicast information by part of the multicast information sent by the information delivery apparatus retransmitted in response to a request for retransmission by the second unit when the first unit determines that its own terminal is placed in retransmission control (Column 4 lines 16 – 49). Kumar further teaches correcting the multicast information by part of the multicast information sent by the information delivery apparatus transmitted in response to a request for retransmission by another terminal when the first unit determines that its own terminal is placed out of retransmission control (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 10, the non active receivers in the group will receive the newly retransmitted packets thus allowing said non active receivers to correct the corrupted packets).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Raymond S. Dean

February 1, 2007

